File

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS

INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS

Name of dam Oroville Dam Dam No. 1-48 County Butte
Type of dam Earthfill Type of Spillway Gated Concrete Weir and Chute
Water is 114.32 feet below spillway crest and 222.52 feet below dam crest.
W.S. 898.96 feet
Weather Conditions Sunny, and hot
Contacts made Alex Samaan, OFD; David Panec O&M.
Reason for inspection Periodic Evaluation (2nd inspection)

Important Observations, Recommendations or Actions Taken
None.

Conclusions
From the known information and the visual inspection, the dam, reservoir, and the appurtenances are judged satisfactory for continued use, pending completion of radial gate repairs.

Item No.*	Item Name and Observation and Comment
A1-A4	Dam - The crest roadway was in good condition, and the embankment appeared to be stable. Vegetation and rodent activity were under control. The downstream embankment is shown in photographs 1 and 2. The thick grass and weeds at the left side of the dam, see photograph 2, probably encompasses the extent of the documented seepage area. The field office continues to monitor the displaced riprap that was previously observed on the upstream slope, see report of 6/18/02. Paint marks on a few of the large rocks will be used to monitor movement relative to a bench mark. If no movement is observed over a two-year period, the monitoring can be terminated. The left and right grout galleries, the core block and the access galleries were traversed. The escape tunnel was traversed to the plug. The right grout gallery was entered from the top. The first seepage was observed at elevation 750. Seepage increased steadily to about 13 gpm at the sump level. Nothing unusual was observed. The left gallery was traversed from the sump to the upper access door. Total seepage was about the same as the right side. Nothing unexpected was observed. The field office should continue the program to remove the accumulated deposits from the floor drains, and steps. The access gallery and terminal S appeared unchanged. The bolts on two compression fittings along the sump pump discharge line have lost the protective coating and are heavily rusted.

Typed by wmp
Date 7/9/03
cc for Book/Owner

Use Field Sheet Standard Numbers and Items (See Reverse Side)

Inspected by WPennington
Date of Inspection 6/19/03
Date of Report 7/9/03
Photos taken? Yes X No
Sheet 1 of 3 Sheets

WPennington 7/9/03

Observations and Comments (Continued)

Item No.*	Item Name and Observation and Comment
	Dam cont. - The DWR corrosion engineering staff will be asked to evaluate these fittings and make recommendations. The tubing bundle seepage at Terminal S was normal. House T has been cleaned. The rodent nesting material and droppings that rest on the tubing bundles should be removed. The access tunnel from Terminal S to the tunnel plug was in satisfactory condition. A portion of the floor drain system appears to be plugged, but this does not impact dam safety. Bidwell Bar Canyon Saddle Dam, Parish Camp Saddle Dam - The saddle dams remain in good condition. No indications of slope instability, significant rodent activity, or objectionable vegetation were observed. Seepage was noted in a gully at toe of the Parish Camp Saddle Dam. The seep was said to have been fairly active in March. Two small pools remain, but no active flow was observed. This area should be observed to see how it reacts as the reservoir level drops. Palermo Tunnel - The tunnel was not entered. Seepage exiting the tunnel appeared to be normal.
6,8,10	Spillway - The stoplogs were being installed at gate 3 during the inspection. Field staff will evaluate the leaky seals. See photograph 3. The spillway chute and walls were observed from the roadway deck, from the walkway at the trunnion level, and from the dam crest. Nothing unexpected was observed. The existing crack at the left side of bay 8 was seeping as shown in photograph 4. The flood control structure, radial gates, and mechanical equipment appeared to be in satisfactory condition. No new spalling has occurred along the left and right bridge abutments as demonstrated by the unbroken paint which is used to monitor the deterioration. The left abutment spalling is shown in photograph 4. Minor seepage was noted at the outside edge of the bay 8 wall as shown in photograph 5. The emergency spillway weir remains in good condition as shown in photograph 6. Where water was against the weir, minor seepage was observed along the downstream toe and at construction and lift joints. See photographs 7 and 8. The seepage is said to be decreasing as the reservoir level goes down.

INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS

Name of Dam Oroville Dam No 1-48

Date of Inspection 6/19/03

Observations and Comments (Continued)

Item No.*	Item Name and Observation and Comment
14,16	Outlet - The valves and valve vault were in satisfactory condition. The valves have been operated within the last year, and are said to operate properly.
17	Seepage - Total seepage from the left and right galleries was in the range of 13 to 14 gpm at the sump. This is low considering the high reservoir level. Seepage at House T and Terminal S was as expected. The Terminal S turbidity readings remain acceptable.
18	Instrumentation - The instrumented monitoring program is under review by O&M. A revised program will be submitted to DSOD for comment. During the last Dam Safety Review Board in 1999, the Board recommended that the Department rely on the survey monuments and seepage readings, and retire the remaining instruments. This approach should be considered. During the inspection, a copy of the latest O&M Performance Review dated December 2002, and a copy of the latest FERC Part 12 Safety Inspection Report dated September 1999 were provided to me. Both were reviewed with regard to instrument data. The conclusion in the reports, and my review of the data, indicate that the dam is functioning satisfactorily. *Hydraulic piezometers*: Of 56 units, only 4 or 5 are thought to be functional. These are read weekly, and follow changes in the reservoir level. *Seepage*: Combined internal drainage and total seepage at the toe weir have tracked the reservoir level and remain within an acceptable range. *Embankment settlement and horizontal movement*: The recent movement data appears to be consistent with historical trends, and indicates that the dam is stable. *Extensometers and Joint Monitoring*: Deformations are measured in the power house and the core block on a quarterly basis.

1. This view shows the downstream embankment as seen from the left groin.

2. Note the thick grass and weed cover at the left end of the dam. This growth may define the seepage area that has been referred to by others over the years. No seepage was observed during the inspection.

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3. Seal leakage at gate 3 is shown. During the inspection, the stoplogs were installed in preparation for an evaluation of the sealing problem.

4. Note the seepage oozing from the existing diagonal crack at the left abutment of the flood control structure. Also shown is the new paint coating that is used to monitor spalling of the abutment. No new spalling has occurred at either abutment since the paint was applied.

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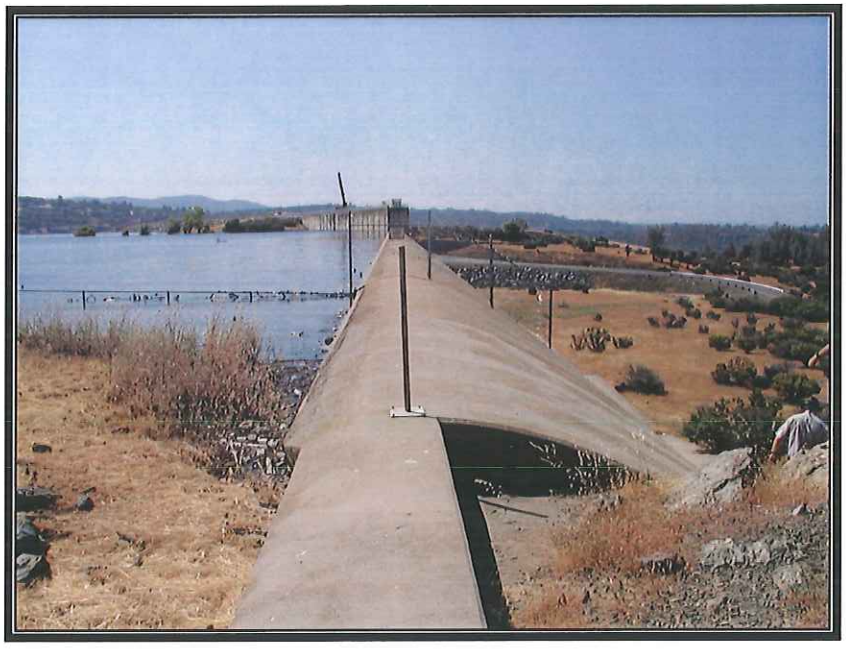
5. The spillway boat ramp access road is at left. Seepage is shown exiting at the toe of the buttress block, just left of the bay 8 wall. This is said to be typical when the reservoir is full. Damp ground was also noted in the drainage swale in the foreground. Water was also trickling from the rock in the middle of the photograph.



6. The south end of the emergency spillway is shown. The structure was in good condition with no misalignment or signs of distress.

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7. The toe of the emergency spillway is shown. This view is to the north. The green grass is in an area where seepage water was observed during the inspection. A small seep from a vertical construction joint is shown at right.

8. Another example of seepage from the emergency spillway weir is shown at left. Seepage was also noted at a few locations along the rock contact, and at lift lines along the top of the weir. None of the seepage appeared to be of particular concern.

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